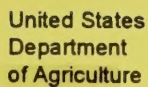


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# Changes Changes Changes in the U.S.

## Feedlot Industry: 1994-1999

**Changes**

# NAHMS

## August 2000



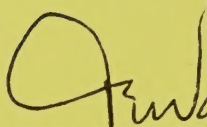
## Acknowledgments

This report has been prepared from material received and analyzed by the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS) during a nationwide study of management and animal health on feedlot operations.

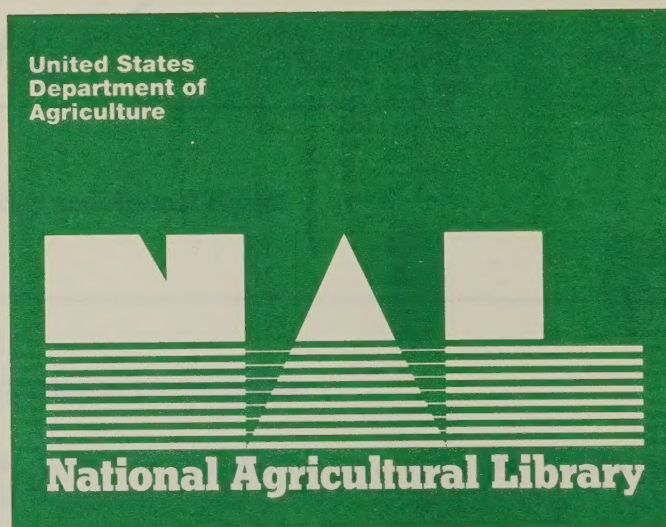
The Feedlot '99 study was a cooperative effort between State and Federal agricultural statisticians, animal health officials, university researchers, extension personnel, and feedlot owners and operators. We want to thank the hundreds of industry members who helped determine the direction and objectives of this study by participating in focus groups.

Thanks to the National Agricultural Statistics Service (NASS) enumerators and State and Federal Veterinary Medical Officers (VMO's) and Animal Health Technician's (AHT's) who visited the operations and collected the data for their hard work and dedication to the National Animal Health Monitoring System (NAHMS). The roles of the producer, Area Veterinarian in Charge (AVIC), NAHMS Coordinator, VMO, AHT, and NASS enumerator were critical in providing quality data for Feedlot '99 reports. Special recognition goes to Dr. Guy Loneragan from the Integrated Livestock Management program at Colorado State University for his contribution to the design and implementation of the Feedlot '99 study and analysis and interpretation of these data. Thanks also to the Centers for Epidemiology and Animal Health (CEAH) for their efforts in generating and distributing timely reports from Feedlot '99 data.

All participants are to be commended for their efforts, particularly the producers whose voluntary efforts made the Feedlot '99 study possible.



Thomas E. Walt  
Director  
Centers for Epidemiology and Animal Health



Suggested bibliography:

USDA. 2000. Cattle and Horse Health  
National Animal Health Monitoring System

VS, CEAH,

Contacts for further information:

Questions or comments on Feedlot '99 study methodology or data analysis: Dr. David Dargatz.

Information on reprints or other NAHMS reports: Ms. Nina Stanton.

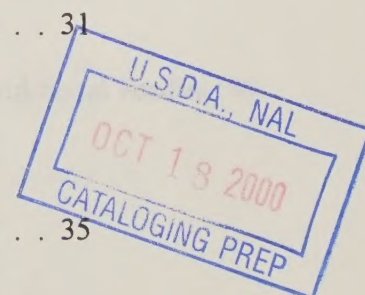
Telephone: (970) 490-8000

E-mail: [NAHMSweb@usda.gov](mailto:NAHMSweb@usda.gov)

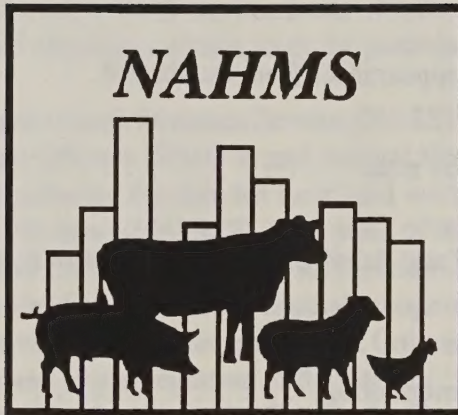


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# NAHMS





## Introduction

In 1983, promoters of the concept that would become the USDA's National Animal Health Monitoring System (NAHMS) envisioned a program that would monitor changes and trends in national animal health and management. They hoped to provide periodic snapshots of U.S. animal industries. With these overviews, industry members could identify opportunities for improvement, provide changing foundations for research and special studies, and detect emerging problems.

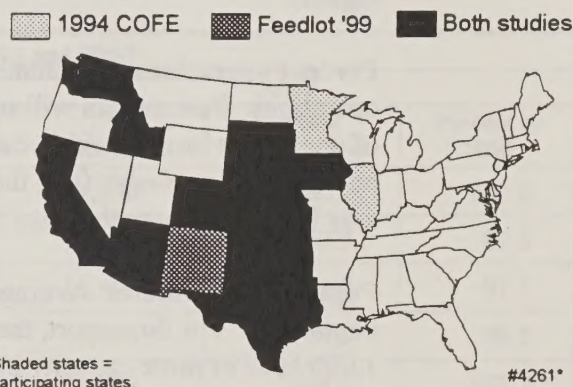
Section I of this report shows demographic changes of the United States feedlot industry from a historical perspective primarily from data provided by the USDA's National Agricultural Statistics Service (NASS).

Results of two NAHMS national studies in Section II provide additional information on changes in the U.S. feedlot industry during the 5-year period from 1995 to 2000.

NAHMS' first national study of the U.S. feedlot industry, the 1994/95 Cattle On Feed Evaluation (COFE), provided a snapshot of animal health and management that would serve as a baseline from which to measure industry changes in animal health and management. Completion of the NAHMS' Feedlot '99 study allows an assessment of change over time, and thus, has begun to fulfill the early vision of the program for the feedlot industry.

COFE Phase I included data collected from 1,411 feedlots in 13 major cattle on feed states.<sup>1</sup> Data were collected via telephone from 913 producers with less than 1,000 head one-time feedlot capacity and via personal interview from 498 producers with 1,000 head or more capacity from August 1 through September 16, 1994. State and Federal Veterinary Medical Officers conducted subsequent data collection on 453 operations with 1,000 head or more capacity from October 3 through December 21, 1994. These states accounted for 85.8 percent of the U.S. cattle on feed inventory as of January 1, 1994.

States that Participated in the NAHMS 1994 COFE and Feedlot '99 Study



The Feedlot '99 study focused on health and health management data collection on those feedlots with 1,000 head or more capacity in 12 major cattle on feed states (see map).<sup>1</sup> Data were collected on 520 feedlot operations via personal interview from August 16 through September 22, 1999. These states accounted for 95.8 percent of the cattle on feed in lots with 1,000 head or more capacity in the U.S. as of January 1, 1999.

In general, questions for COFE and Feedlot '99 referred to management practices for cattle placed during a 12-month period from July 1 of the previous year through June 30 of the current year.

Results of the feedlot and other studies are accessible on the World Wide Web at [www.aphis.usda.gov/vs/ceah/cahm](http://www.aphis.usda.gov/vs/ceah/cahm) (see Beef Feedlot). For questions about this report or additional Feedlot '99 and NAHMS results, please contact:

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USDA:APHIS:VS, attn. NAHMS  
555 South Howes; Fort Collins, CO 80521  
(970) 490-8000; [NAHMSweb@usda.gov](mailto:NAHMSweb@usda.gov)  
[www.aphis.usda.gov/vs/ceah/cahm](http://www.aphis.usda.gov/vs/ceah/cahm)

\*Identification numbers are assigned to each graph in this report for public reference.

<sup>1</sup> Arizona, California, Colorado, Idaho, Illinois, Iowa, Kansas, Minnesota, Nebraska, Oklahoma, South Dakota, Texas, and Washington.



## Terms Used in This Report

**Cattle placed/placement:** Cattle placed in a feedlot, fed a high-energy ration and intended for the slaughter market.

**Cattle on feed:** Animals being fed a high-energy ration of grain, silage, hay, and/or protein supplement for the slaughter market, excluding cattle being "backgrounded only" for later sale as feeders or later placement in another feedlot and animals grown for breeding.

**MGA<sup>®</sup>:** melengesterol acetate, a heat suppressant for females.

**N/A:** Not applicable.

**N/AV:** Not available.

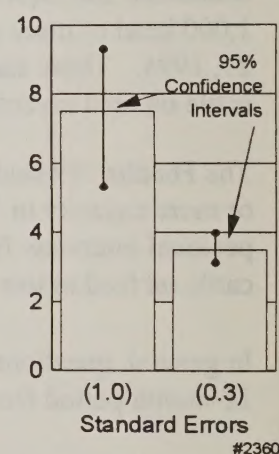
**Operation:** An area of land managed as a unit by an individual, partnership, or hired manager.

**Percent cattle:** The total number of cattle with a certain attribute divided by the total number of cattle on all operations (or on all operations within a certain category such as by operation capacity or region).

**Percent operations:** The number of operations with a certain attribute divided by the total number of operations. Percentages will sum to 100 where the attributes are mutually exclusive (i.e., percentage of operations located within each region). Percentages will *not* sum to 100 where the attributes are not mutually exclusive (i.e., the percentage of operations using treatment methods where operations may have used more than one method).

**Population estimates:** Averages and proportions weighted to represent the population. For this report, the reference population was all operations with 1,000 head or more capacity in the selected states. Estimates in this report are provided with a measure of precision called the *standard error*. A confidence interval can be created with bounds equal to the estimate plus or minus two standard errors. If the only error is sampling error, then confidence intervals created in this manner will contain the true population mean 95 out of 100 times. In the example at right, an estimate of 7.5 with a standard error of 1.0 results in a confidence interval of 5.5 to 9.5 (two times the standard error above and below the estimate). The second estimate of 3.4 shows a standard error of 0.3 and results in a confidence interval of 2.8 and 4.0. Alternatively, the 90 percent confidence interval would be created by multiplying the standard error by 1.65 instead of two. Most estimates in this report are rounded to the nearest tenth. If rounded to 0, the standard error was reported as (0.0). If there were no reports of the event, no standard error was reported (--).

Examples of a  
95% Confidence Interval



**Sample profile:** Information that describes characteristics of the operations from which data were collected.

**Operation capacity:** Size groupings based on feedlot capacity. The capacity is the total number of head of cattle that could be accommodated in the feedlot at one time.



## Section I: Demographics, 1995-2000

### A. Changes in Cattle on Feed Industry

#### 1. Cattle on Feed Inventory

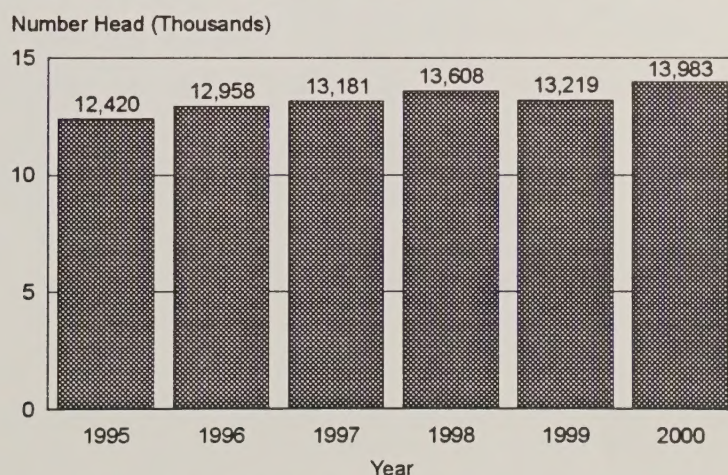
Throughout each year, the USDA's National Agricultural Statistics Service (NASS) surveys a random sample of producers to provide national estimates of animal populations and food production. This section reports NASS' demographics of the U.S. feedlot industry as estimated from their surveys. In January and July of each year, both feedlots of less than 1,000 head capacity and those of 1,000 head or more capacity are surveyed to provide the U.S. estimate of cattle on feed. Thereafter on a monthly basis, only the large feedlots are surveyed.

The following tables show changes over the previous 5 years in total inventory of cattle on feed, size of feedlots, characteristics of placements, disappearance, and number of feedlots. The period of January 1, 1995, through January 1, 2000, is characterized by a general increase in the total number of cattle on feed with a decline only from 1998 to 1999. January 1, 2000, shows a 12.6 percent increase over January 1, 1995.

a. Number of cattle on feed in the U.S., January and July 1995 and 2000:						
Year	January 1			July 1		
	1,000 Head	Percent Previous Year	Percent of 1995	1,000 Head	Percent Previous Year	Percent of 1995
1995	12,420	95.4	100.0	11,200	106.7	100.0
1996	12,958	104.3	104.3	9,800	87.5	87.5
1997	13,181	101.7	106.1	10,900	111.2	97.3
1998	13,608	103.2	109.6	11,000	100.9	98.2
1999	13,219	97.1	106.4	11,500	104.5	102.7
2000	13,983	105.8	112.6	12,300	107.0	109.8

Source: National Agriculture Statistics Service (NASS).

Number of Cattle on Feed in the U.S.,  
January 1995 - 2000



Source: National Agricultural Statistics Service (NASS).

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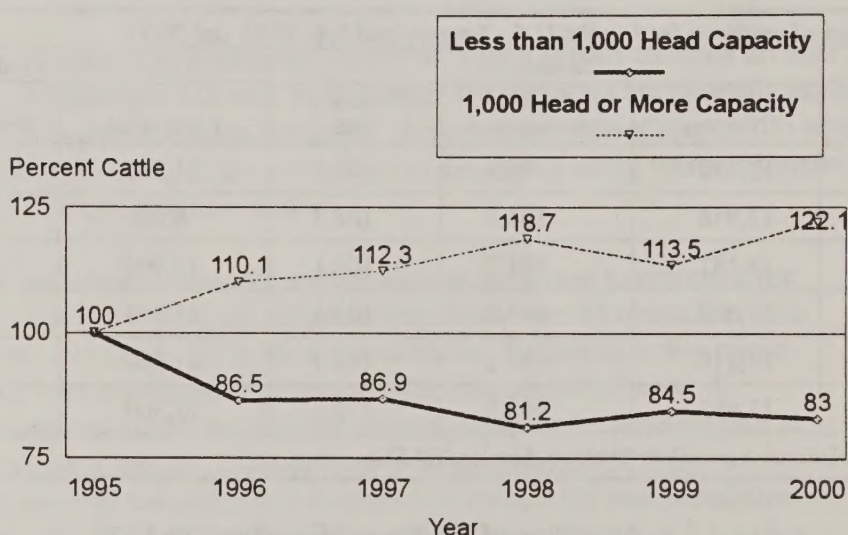


The increase in number on feed clearly occurs in feedlots with 1,000 head or more capacity.

b. Number of cattle on feed in the U.S. on small vs. large feedlots, January 1, 1995 - 2000:						
Year	Feedlots Less than 1,000 Head Capacity			Feedlots 1,000 Head or More Capacity		
	1,000 Head	Percent Previous Year	Percent of 1995	1,000 Head	Percent Previous Year	Percent of 1995
1995	3,020	N/AV	100.0	9,400	N/AV	100.0
1996	2,612	86.5	86.5	10,346	110.1	110.1
1997	2,623	100.4	86.9	10,558	102.0	112.3
1998	2,453	93.5	81.2	11,155	105.7	118.7
1999	2,552	104.0	84.5	10,667	95.6	113.5
2000	2,508	98.3	83.0	11,475	107.6	122.1

Source: National Agriculture Statistics Service (NASS).

Cattle on Feed in the U.S. on Feedlots as a Percent of 1995 by Operation Capacity, January 1, 1995 - 2000



Source: National Agricultural Statistics Service (NASS).

#4262



Feedlots with 32,000 head or more capacity show a steady 2 percent increase per year in their contribution to the total number of cattle on feed and accounted for over one-third (35.9 percent) of all cattle on feed on January 1, 2000.

c. Number of cattle on feed in the U.S. by feedlot capacity, January 1, 1995 - 2000:

Year	Less than 1,000 Head		1,000 - 7,999 Head		8,000 - 15,999 Head		16,000 - 31,999 Head		32,000 Head or More	
	1,000 Head	Percent of Total	1,000 Head	Percent of Total	1,000 Head	Percent of Total	1,000 Head	Percent of Total	1,000 Head	Percent of Total
1995	3,020	24.3	N/AV	N/AV	N/AV	N/AV	N/AV	N/AV	N/AV	N/AV
1996	2,612	20.2	N/AV	N/AV	N/AV	N/AV	N/AV	N/AV	N/AV	N/AV
1997	2,623	19.9	2,365	18.0	1,543	11.7	2,707	20.5	3,943	29.9
1998	2,453	18.0	2,433	17.9	1,596	11.7	2,797	20.6	4,329	31.8
1999	2,552	19.3	2,212	16.7	1,424	10.8	2,546	19.3	4,485	33.9
2000	2,508	17.9	2,389	17.1	1,556	11.1	2,512	18.0	5,018	35.9

Source: National Agriculture Statistics Service (NASS).

The inventory mix of steers and heifers changed from 65 to 60 percent steers and 35 to 40 percent heifers from 1995 to 2000.

d. Number of steers, heifers, cows, and bulls on feed in 1,000 head or more capacity feedlots, January 1, 1995 - 2000:

Year	Steers & Steer Calves		Heifers & Heifer Calves		Cows & Bulls	
	1,000 Head	Percent of Total	1,000 Head	Percent of Total	1,000 Head	Percent of Total
1995	6,105	64.9	3,260	34.7	35	0.4
1996	6,635	64.1	3,627	35.1	84	0.8
1997	6,398	60.6	4,069	38.5	91	0.9
1998	6,796	60.9	4,300	38.6	59	0.5
1999	6,461	60.6	4,153	38.9	53	0.5
2000	6,840	59.6	4,574	39.9	61	0.5

Source: National Agriculture Statistics Service (NASS).

## 2. Cattle Placed on Feed

There are no clear trends in the number of cattle placed by weight group, although the proportion of cattle placed at 800 lbs. or more each January seems to have increased slightly to 17.1 percent of the total placed during January 2000. Proportions placed in the other size groups vary, suggesting changing conditions, such as availability, pasture conditions, may have more of an impact than a trend in placement weight.

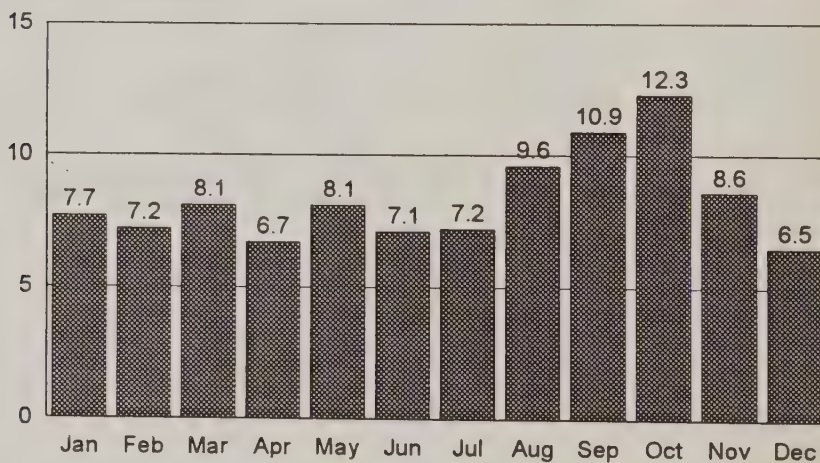
a. Number of cattle placed on feed during January by weight group in 1,000 head or more capacity feedlots, January 1, 1995 - 2000:

Year	Less than 600 lbs.		600 - 699 lbs.		700 - 799 lbs.		800 or more lbs.	
	1,000 Head	Percent of Total	1,000 Head	Percent of Total	1,000 Head	Percent of Total	1,000 Head	Percent of Total
1995	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1996	260	16.8	550	35.5	499	32.2	240	15.5
1997	409	21.7	657	34.8	522	27.7	299	15.8
1998	317	18.4	560	32.4	550	31.9	299	17.3
1999	379	19.6	628	32.5	604	31.2	322	16.7
2000	494	22.2	696	31.3	654	29.4	382	17.1

Source: National Agriculture Statistics Service (NASS).

Percent of Cattle by Month in Feedlots with 1,000 Head or More Capacity, 1999

Percent Placements



Source: National Agricultural Statistics Service (NASS).

#4290



The number of cattle placed by month over the 4-year period, 1996-1999, consistently shows the largest number placed during October, the next largest in September, followed by August or November.

b. Number of cattle placed on feed by month in 1,000 head or more capacity feedlots, January 1996 - 1999:

Month	1996		1997		1998		1999	
	1,000 Head	Percent of Previous Month	1,000 Head	Percent of Previous Month	1,000 Head	Percent of Previous Month	1,000 Head	Percent of Previous Month
January	1,549	89.6	1,887	111.3	1,726	111.2	1,933	127.8
February	1,713	110.6	1,797	95.2	1,496	86.7	1,808	93.5
March	1,948	113.7	1,966	109.4	1,709	114.2	2,031	112.3
April	1,364	70.0	1,548	78.7	1,584	92.7	1,688	83.1
May	1,557	114.1	1,864	120.4	2,033	128.3	2,049	121.4
June	1,305	83.8	1,444	77.5	1,564	76.9	1,794	87.6
July	1,746	133.8	1,995	138.2	1,937	123.8	1,812	101.0
August	2,265	129.7	2,429	121.8	2,063	106.5	2,428	134.0
September	2,653	117.1	2,711	111.6	2,660	128.9	2,759	113.6
October	3,007	113.3	2,916	107.6	2,830	106.4	3,114	112.9
November	2,348	78.1	2,207	75.7	2,065	73.0	2,170	69.7
December	1,695	72.2	1,552	70.3	1,512	73.2	1,646	75.9
Total	23,150		24,316		23,179		23,183	

Source: National Agriculture Statistics Service (NASS). (1995 data are available but not shown.)

c. Percent of yearly placements by month and year in feedlots with 1,000 head or more capacity, 1996 - 1999:

Month	Percent Placements			
	1996	1997	1998	1999
January	6.7	7.7	7.4	7.7
February	7.4	7.4	6.5	7.2
March	8.4	8.1	7.4	8.1
April	5.9	6.4	6.8	6.7
May	6.7	7.7	8.8	8.1
June	5.6	5.9	6.7	7.1
July	7.5	8.2	8.4	7.2
August	9.8	10.0	8.9	9.6
September	11.5	11.1	11.5	10.9
October	13.0	12.0	12.2	12.3
November	10.2	9.1	8.9	8.6
December	7.3	6.4	6.5	6.5
Total	100.0	100.0	100.0	100.0

Source: National Agriculture Statistics Service (NASS). (1995 data are available but not shown.)

### 3. "Other" (Non-harvest) Disappearances from the Feedlot

The table below provides monthly estimates of cattle departures from feedlots for reasons other than harvest. This disappearance includes not only death loss, but return of cattle to pasture and placement in another feedlot. This number varied from roughly 50,000 to 100,000 head each month.

a. Number of cattle placed on feed for the slaughter market that left the feedlot for non-harvest reasons, such as death loss, movement from feedlots to pasture, and shipments to other feedlots by month, January 1996 - 1999, in 1,000 head or more capacity feedlots:

Month	1996		1997		1998		1999	
	1,000 Head	Percent of Previous Month	1,000 Head	Percent of Previous Month	1,000 Head	Percent of Previous Month	1,000 Head	Percent of Previous Month
January	65	95.6	92	107.0	99	116.5	70	82.4
February	72	110.8	61	66.3	69	69.7	65	92.9
March	76	105.6	86	141.0	94	136.2	71	109.2
April	107	140.8	98	114.0	92	97.9	104	146.5
May	84	78.5	117	119.4	93	101.1	99	95.2
June	70	83.3	60	51.3	72	77.4	63	63.6
July	62	88.6	57	95.0	50	69.4	52	82.5
August	50	80.6	45	78.9	52	104.0	55	105.8
September	70	140.0	53	117.8	61	117.3	62	112.7
October	78	111.4	91	171.7	52	85.2	80	129.0
November	93	119.2	85	93.4	78	150.0	83	103.7
December	86	92.5	85	100.0	85	109.0	90	108.4
Total	913	--	930	--	897	--	894	--

Source: National Agriculture Statistics Service (NASS). (1995 data are available but not shown.)

Cattle departures from feedlots for reasons other than harvest appears relatively constant over time.

b. Number of cattle placed on feed for the slaughter market that left the feedlot for non-harvest reasons, such as death loss, movement from feedlots to pasture, and shipments to other feedlots, as a percent of yearly placements in 1,000 head or more capacity feedlots:

Year	Percent
1996	3.94
1997	3.82
1998	3.87
1999	3.86

Source: National Agriculture Statistics Service (NASS). (1995 data are available but not shown.)



#### 4. Number of Feedlots

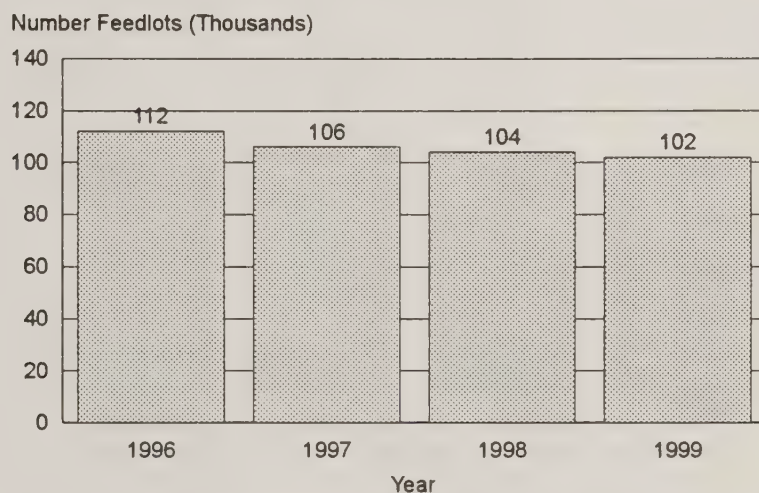
The total number of feedlots declined steadily over the 4 years from 1996 through 1999. Total feedlots in 1999 was 9 percent less than in 1996. The decline was predominantly in feedlots with a capacity of fewer than 1,000 head, while the number of feedlots for most large size groups increased.

a. Number of feedlots in the U.S. by operation capacity, January 1996 - 1999:

Capacity (Number Head)	1996		1997		1998		1999	
	Number	Percent of Previous Year	Number	Percent of Previous Year	Number	Percent of Previous Year	Number	Percent of Previous Year
Less than 1,000	110,000	N/AV	104,000	94.5	102,000	98.1	100,000	98.0
1,000-1,999	874	N/AV	842	96.3	834	99.0	831	99.6
2,000 - 3,999	515	N/AV	504	97.9	491	97.4	507	103.3
4,000-7,999	304	N/AV	308	101.3	313	101.6	336	107.3
8,000-15,999	187	N/AV	191	102.1	184	96.3	193	104.9
16,000-31,999	138	N/AV	137	99.3	143	104.4	141	98.6
32,000 or more	91	N/AV	93	102.2	107	115.1	111	103.7
Total	112,109	N/AV	106,075	94.6	104,072	98.1	102,119	98.1

Source: National Agriculture Statistics Service (NASS). (1995 not available).

Number of Feedlots in the U.S.,  
1996 - 1999



Source: National Agricultural Statistics Service (NASS).

#4263

## 5. Feedlot Industry Changes by State

The following table describes U.S. feedlot industry changes by state between January 1, 1995, and January 1, 2000, based on NASS data.

States that historically have fed the majority of feedlot cattle have continued to increase their share of the U.S. feedlot industry. Colorado, Iowa, Kansas, Nebraska, and Texas accounted for 67 percent of the total U.S. cattle on feed on January 1, 1995. On January 1, 2000, the proportion of cattle on feed in these states had risen to 72 percent. Of the remaining states, most western states (namely Arizona, California, and Washington) were feeding more cattle, while mid-western states (Illinois, Indiana, Michigan, and Ohio) were feeding fewer.

Note: Eleven states were in both the NAHMS 1994 Cattle on Feed Evaluation (COFE) and Feedlot '99 study.



## a. Changes in number cattle/calves on feed and number feedlots by state (NASS data), 1995 and 2000:

State	On-farm Participation		# of Cattle/Calves on Feed (Thousand Head)				Number Feedlots			
			1,000+ Capacity Feedlots		All Feedlots		<1,000 Capacity		1,000+ Capacity	
	COFE '94	Feedlot '99	1/1/95	1/1/00	1/1/95	1/1/00	1994	1999	1994	1999
Alabama					8	4				
Alaska					*	*				
Arizona	Yes	Yes	210	272	210	272			10	7
Arkansas					13	11				
California	Yes	Yes	400	415	400	415			38	24
Colorado	Yes	Yes	966	1,180	990	1,200			172	162
Connecticut					*	*				
Delaware					*	*				
Florida					*	*				
Georgia					15	3				
Hawaii					*	*				
Idaho	Yes	Yes	255	310	270	315			60	55
Illinois	Yes				280	230	7,150	6,300		
Indiana					200	120	N/AV	5,800		
Iowa	Yes	Yes	365	375	910	1,100	14,725	12,000	275	325
Kansas	Yes	Yes	1,990	2,310	2,040	2,350			305	220
Kentucky					40	15				
Louisiana					5	*				
Maine					*	*				
Maryland					20	17				
Massachusetts					*	*				
Michigan					210	200	N/AV	4,000		
Minnesota	Yes				300	285	7,950	7,400		
Mississippi					4	*				
Missouri					70	100	N/AV	3,900		
Montana					100	70				
Nebraska	Yes	Yes	1,730	2,300	1,940	2,440	5,050	4,335	650	685
Nevada					25	21				
New Hampshire					*	*				
New Jersey					4	3				
New Mexico		Yes	N/AV	116	155	116			N/AV	10
New York					25	30				
North Carolina					15	5				
North Dakota					100	70	N/AV	1,600		
Ohio					225	190	N/AV	7,400		
Oklahoma	Yes	Yes	375	430	380	435			20	27
Oregon					100	50				
Pennsylvania					80	75	N/AV	5,100		
Rhode Island					*	*				
South Carolina					7	6				
South Dakota	Yes	Yes	160	194	340	350	3,700	3,200	100	123
Tennessee					27	10				
Texas	Yes	Yes	2,370	2,900	2,380	2,910			137	142
Utah					60	35				
Vermont					*	*				
Virginia					40	27				
Washington	Yes	Yes	151	228	156	235			20	19
West Virginia					10	7				
Wisconsin					150	160	N/AV	7,400		
Wyoming					100	90				
* Other states			N/AV	445	16	11	N/AV	31,565	N/AV	320
U.S.	13	12	9,400	11,475	12,420	13,983	N/AV	100,000	N/AV	2,119

## 6. Cattle Harvest

The total federally inspected slaughter from 1995 to 2000 shows a decreasing contribution from steers and a higher contribution from heifers. This same relationship was seen when comparing the January 1 steer and heifer inventories on feed (see table I.A.1.d).

a. Cattle slaughtered under Federal Inspection, 1995 and 1999:					
Classification	1995		1999		
	Number Head (Thousand Head)	Percent of Total	Number Head (Thousand Head)	Percent of Total	Percent of 1995
Steers	17,887.2	51.3	17,608.0	49.6	98.4
Heifers	10,174.6	29.2	11,648.4	32.8	114.5
Dairy cows	2,861.7	8.2	2,573.3	7.3	89.9
Other cows	3,281.1	9.4	3,029.7	8.5	92.3
Bulls and stags	674.4	1.9	626.9	1.8	93.0
Total	34,879.0	100.0	35,486.3	100.0	101.7

Source: National Agriculture Statistics Service (NASS).

June was the peak fed-cattle harvest month for both 1995 and 1999. Finished market weights for each month in 1999 were heavier compared to 1995, ranging from 17 lbs. higher in August and September up to 40 lbs. higher in March.

b. Cattle slaughtered under Federal Inspection* by month, 1995 and 1999:					
Month	1995		1999		Change in Average Live Weight (1999-1995) (In Pounds)
	Number Head (in Thousands)	Live Weight/Head (in Pounds)	Number Head (in Thousands)	Live Weight/Head (in Pounds)	
January	2,802.4	1,192	2,903.5	1,224	+32
February	2,529.6	1,187	2,665.2	1,225	+38
March	2,900.5	1,180	2,990.2	1,220	+40
April	2,601.6	1,175	2,916.4	1,204	+29
May	3,076.8	1,173	2,947.2	1,191	+18
June	3,199.8	1,179	3,153.9	1,197	+18
July	2,890.7	1,187	3,036.8	1,208	+21
August	3,175.8	1,191	3,099.3	1,208	+17
September	3,034.6	1,196	3,044.9	1,213	+17
October	2,999.0	1,194	3,033.2	1,217	+23
November	2,914.8	1,192	2,881.5	1,220	+28
December	2,753.4	1,197	2,814.2	1,228	+31
Total	34,879.0	1,187	35,486.3	1,212	+25

\* Federally inspected cattle slaughter accounted for 97.9 percent of the total commercial slaughter in 1995 and 98.2 percent in 1999. The components of total commercial slaughter in 1999 (36.2 million head) were federally inspected slaughter (35.5 million head) and other slaughter (0.7 million head).

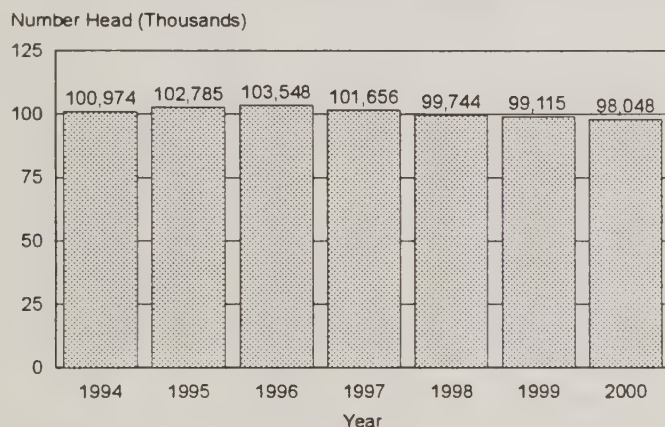
Source: National Agriculture Statistics Service (NASS).



## 7. All Cattle and Calves (Beef and Dairy) Production, Disposition, and Income, 1994-2000

a. Change by year:							
Year	Number (Thousand Head)						Gross Income (in Billion Dollars)
	January 1 All Cattle Inventory	Total Calf Crop	Marketings		Deaths		
			Cattle	Calves	Cattle	Calves	
1994	100,973.6	40,104.5	46,499.1	9,571.2	1,589.0	2,681.3	\$36.6
1995	102,785.2	40,263.7	48,741.0	9,656.1	1,644.7	2,738.8	\$34.3
1996	103,548.2	39,823.0	48,721.9	10,295.1	1,761.3	2,810.6	\$31.3
1997	101,655.7	38,960.9	49,646.7	10,154.4	1,847.1	2,828.6	\$36.3
1998	99,744.0	38,812.1	47,226.7	9,729.1	1,668.0	2,541.5	\$33.7
1999	99,115.0	38,710.4	48,386.2	9,856.4	1,659.0	2,454.8	\$36.8
2000	98,048.0	N/AV	N/AV	N/AV	N/AV	N/AV	N/AV
Source: National Agriculture Statistics Service (NASS).							

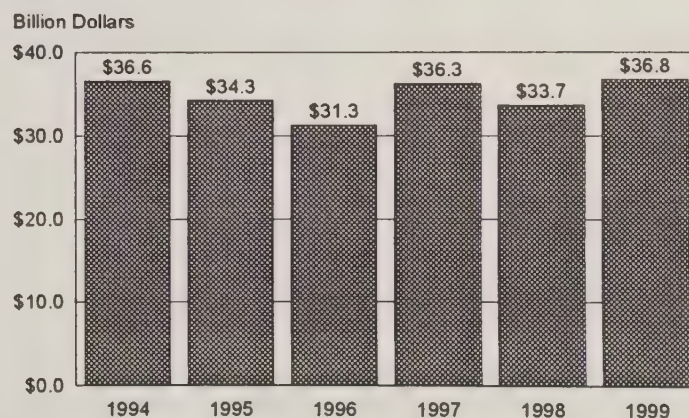
All Cattle Inventory in the U.S.,  
January 1, 1994 - 2000



Source: National Agricultural Statistics Service (NASS)

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Gross Income from Cattle in the U.S.,  
1994 - 1999



Source: National Agricultural Statistics Service (NASS).

#4292

**8. Miscellaneous Information**

a. Cattle whole carcass condemnations, 1993 - 1999 (thousand head):			
Year	Number Slaughtered	Number Condemned	Percent Condemned
1993	32,441	159.9	0.49
1994	33,121	164.5	0.50
1995	34,640	174.1	0.50
1996	35,714	181.5	0.51
1997	35,576	176.2	0.50
1998	34,911	157.1	0.44
1999	N/AV	N/AV	N/AV

Source: Condemnations include ante-mortem and post-mortem inspection.  
Under Federal Inspection fiscal year ending September 30, reported by the Food Safety Inspection Service (FSIS), USDA.  
Iowa Ag Stats, 515-284-4340.

b. Weighted average choice fed steer cattle prices by year, 1994 - 1999*:	
Year	Price (in Dollars/cwt)
1994	\$69.29
1995	\$66.57
1996	\$65.00
1997	\$66.09
1998	\$61.73
1999	\$65.65

\* Cattle-Fax, P.O. Box 3947, Englewood, CO 80155.



## 9. NAHMS Sentinel Feedlot Monitoring

The Sentinel Feedlot Monitoring program was developed to identify changes in disease occurrence in cattle on U.S. feedlots. Since data collection was initiated in 1993, NAHMS has gathered data from an increasing number of feedlots (via consulting veterinarians). Participation in this program is voluntary and confidential. Data for the tables below were from 57 feedlots (six veterinarians) in 1994 and 94 feedlots (nine veterinarians) in 1999.

Feedlot data are submitted monthly through veterinary consultants to maintain confidentiality. Cause of death is attributed by feedlot personnel under the supervision of the consulting veterinarian. In return for sharing data on cattle health, the veterinarians receive monthly reports which summarize and compare data from their client feedlots with those from all feedlots submitted that month. Data from all participating feedlots\* and those feedlots\*\* that had supplied at least 10 months of data each year from January 1, 1994, through December 31, 1999, are presented below.

Results differed little between all participating feedlots and those that had contributed at least 10 months of data each year since 1994. The increase in death loss as a percent of cattle may have resulted from:

- 1) a change in type of animal placed over time,
- 2) changes in health management of cattle in the feedlots,
- 3) reduced numbers of cattle sold prior to slaughter weight for health reasons so that they were more likely to have died from their disease at the feedlot, or
- 4) changes in nutritional management of the cattle at the feedlot.

a. Number of cattle and calves that died as a percent of the number placed during the calendar year by year:		
Year	Percent of Cattle	
	All Sentinel Feedlots*	Sentinel Subgroup: 24 Feedlots**
1994	1.0	1.0
1995	1.2	1.2
1996	1.1	1.1
1997	1.4	1.3
1998	1.3	1.3
1999	1.4	1.4
*All feedlots participating in the Sentinel Feedlot Monitoring program from January 1, 1994, through December 31, 1999.		
**Those sentinel feedlots that had submitted at least 10 months of data each year from January 1, 1994, through December 31, 1999.		

The proportion of cattle deaths attributed to respiratory causes appears to have increased, whereas the proportion of deaths attributed to digestive causes decreased.

b. Percent of total death loss by attributed cause of loss and summarization category:				
Year	Percent Death Loss			
	Respiratory	Digestive	Other	Total
All Sentinel Feedlots**				
1994	52.1	27.2	20.7	100.0
1995	55.4	24.8	19.8	100.0
1996	55.4	24.0	20.6	100.0
1997	59.6	21.4	19.0	100.0
1998	57.0	23.2	19.8	100.0
1999	61.5	19.5	19.0	100.0
Sentinel Subgroup: 24 Feedlots**				
1994	52.2	28.8	19.0	100.0
1995	54.4	28.0	17.6	100.0
1996	53.5	28.3	18.2	100.0
1997	58.2	24.7	17.1	100.0
1998	56.8	26.0	17.2	100.0
1999	61.2	21.9	16.9	100.0
*All feedlots participating in the Sentinel Feedlot Monitoring program from January 1, 1994, through December 31, 1999.				
**Those sentinel feedlots that had submitted at least 10 months of data each year from January 1, 1994, through December 31, 1999.				



## Section II: NAHMS Population Estimates

The time frame for questions regarding placements and procedures performed on cattle is for the years ending June 30 in 1994 (COFE) and 1999 (Feedlot '99 study).

### A. Placement Profile

#### 1. Type of Cattle, Gender, and Disposition

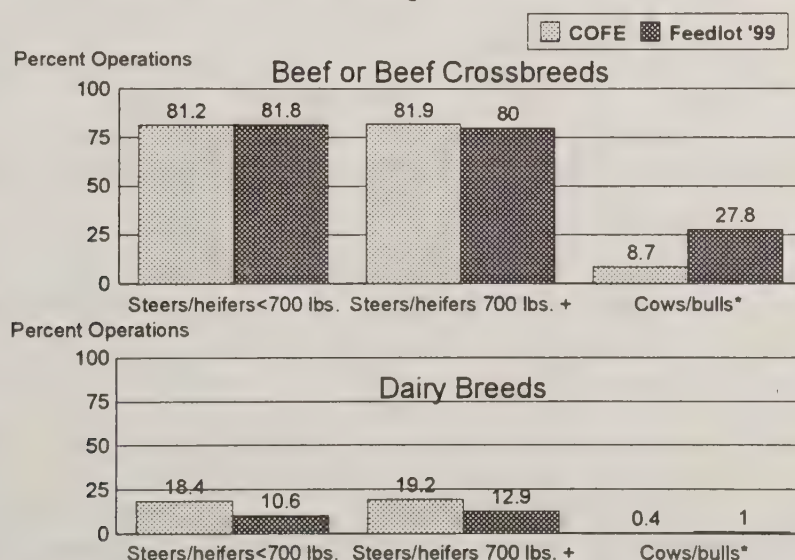
The percentage of feedlots that placed beef steers and heifers changed little from 1994 to 1999. Although feedlots that placed dairy steers and heifers were in the minority, data suggest a decreased percentage of feedlots placed these classes of dairy cattle in 1999.

a. Percent of operations that placed the following types of cattle for the U.S. slaughter market by operation capacity, 1994 - 1999:

Type of Cattle	1994 COFE						Feedlot '99					
	1,000 - 7,999 Head		8,000 Head or More		All Operations		1,000 - 7,999 Head		8,000 Head or More		All Operations	
	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error
Steers and heifers less than 700 lbs.												
Beef or beef crossbreeds	76.3	(2.1)	94.9	(1.1)	81.2	(1.5)	76.9	(2.4)	94.3	(1.1)	81.8	(1.8)
Dairy breeds	8.1	(1.2)	47.3	(2.3)	18.4	(1.1)	5.4	(0.9)	24.2	(1.9)	10.6	(0.9)
Steers and heifers 700 lbs. or more												
Beef or beef crossbreeds	77.5	(2.0)	94.1	(1.1)	81.9	(1.5)	74.3	(2.5)	95.2	(0.8)	80.0	(1.8)
Dairy breeds	12.6	(1.5)	37.7	(2.4)	19.2	(1.3)	7.9	(1.4)	26.0	(2.1)	12.9	(1.2)
Cows and bulls												
Question variation:	Did you place any cows? bulls?						Did you place any cows? Did you place any bulls?					
Beef or beef crossbreeds	7.3	(1.2)	12.4	(1.7)	8.7	(1.0)	23.1	(2.2)	40.3	(2.3)	27.8	(1.7)
Dairy breeds	0.1	(0.0)	1.0	(0.4)	0.4	(0.1)	0.6	(0.4)	1.9	(0.6)	1.0	(0.3)

\* During the period July 1 of the previous year through June 30th of the current year.

Percent of Operations that Placed the Following Types of Cattle for the U.S. Slaughter Market, 1994 and 1999



\* Questions relating to the cows/bulls category varied slightly between the two studies.

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For all operations, the percentages of dairy breed placements weighing less than 700 lbs declined from 1994 to 1999 (5.1 percent compared to 1.5, respectively). There was a smaller decrease in dairy breed placements weighing 700 lbs. or more (1.9 percent compared to 1.2 percent, respectively). With regard to beef breeds and beef crossbreeds, small feedlots tended to increase the percentage of placements weighing less than 700 lbs. Conversely, large feedlots increased the number of placements weighing 700 lbs. or more.

b. Percent of cattle placed for the U.S. slaughter market by type of cattle and by operation capacity:										
	1994 COFE						Feedlot '99			
	1,000 - 7,999 Head		8,000 Head or More		All Operations		1,000 - 7,999 Head		8,000 Head or More	
Type of Cattle	Percent	Stan. Error	Percent	Stan. Error	Percent	Stan. Error	Percent	Stan. Error	Percent	Stan. Error
Steers and heifers less than 700 lbs.										
Beef or beef crossbreeds	39.1	(2.0)	44.3	(1.6)	43.4	(1.4)	42.7	(1.9)	42.1	(1.2)
Dairy breeds	1.6	(0.4)	5.9	(0.7)	5.1	(0.6)	0.9	(0.3)	1.5	(0.3)
Steers and heifers 700 lbs. or more										
Beef or beef crossbreeds	56.9	(2.1)	47.5	(1.5)	49.1	(1.3)	53.1	(1.9)	53.8	(1.2)
Dairy breeds	1.1	(0.2)	2.0	(0.2)	1.9	(0.2)	1.4	(0.5)	1.2	(0.3)
Cows and bulls										
Question variation:	Percent cows or bulls placed?					Percent cows placed? Percent bulls placed?				
Beef or beef crossbreeds	1.3	(0.3)	0.3	(0.1)	0.5	(0.1)	1.9	(0.3)	1.4	(0.2)
Dairy breeds	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
Total	100.0		100.0		100.0		100.0		100.0	

The profile of animals that were placed on feed for the U.S. beef harvest market clearly changed. In both large and small feedlots, the percentage of steers placed decreased while the percentage of heifers increased. These changes are greatest for those feedlots with 8,000-head or greater capacity and were consistent across beef and dairy types. In the 1994 COFE, 65.4 percent of beef placements were steers, whereas 57.1 percent were steers in the Feedlot '99 study. The proportional increase in heifers may be due in part to decrease in U.S. cattle inventory, i.e., ranchers retained fewer heifers for breeding purposes.

c. Percent of beef cattle (and percent of dairy cattle) placed for the U.S. slaughter market by gender of cattle and by operation capacity:										
	1994 COFE						Feedlot '99			
	1,000 - 7,999 Head		8,000 Head or More		All Operations		1,000 - 7,999 Head		8,000 Head or More	
Gender of Cattle	Percent	Stan. Error	Percent	Stan. Error	Percent	Stan. Error	Percent	Stan. Error	Percent	Stan. Error
Beef										
Steers	64.8	(1.6)	65.5	(1.0)	65.4	(0.9)	61.9	(1.6)	56.2	(1.1)
Heifers	33.9	(1.6)	34.2	(1.0)	34.1	(0.9)	36.2	(1.6)	42.4	(1.1)
Question variation:	Percent cows or bulls placed?					Percent cows placed? Percent bulls placed?				
Cows and bulls	1.3	(0.4)	0.3	(0.1)	0.5	(0.1)	1.9	(0.3)	1.4	(0.2)
Total	100.0		100.0		100.0		100.0		100.0	
Dairy										
Steers	94.2	(1.5)	97.4	(1.0)	97.2	(0.9)	80.3	6.5	90.0	(2.5)
Heifers	5.8	(1.5)	2.6	(1.0)	2.8	(0.9)	19.6	6.5	9.7	(2.5)
Question variation:	Percent cows or bulls placed?					Percent cows placed? Percent bulls placed?				
Cows and bulls	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.1	(0.0)	0.3	(0.1)
Total	100.0		100.0		100.0		100.0		100.0	



The percentages of cattle by final disposition were similar in the two study years. The percentages of placements that were returned to grazing forage and shipped to another feedlot decreased in 1999 compared to 1994. Theft apparently remains no problem for U.S. feedlots.

d. Percent of cattle by disposition category <sup>1</sup> and by operation capacity:												
	1994 COFE						Feedlot '99					
	1,000 - 7,999 Head		8,000 Head or More		All Operations		1,000 - 7,999 Head		8,000 Head or More		All Operations	
Category	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error
Marketed for harvest	94.4	(0.5)	96.1	(0.6)	95.8	(0.5)	94.8	(0.5)	97.1	(0.2)	96.7	(0.2)
Died	1.1	(0.1)	1.2	(0.0)	1.1	(0.0)	0.9	(0.0)	1.3	(0.1)	1.3	(0.1)
Sent to market prior to slaughter weight	0.3	(0.1)	0.4	(0.1)	0.4	(0.1)	0.4	(0.2)	0.3	(0.0)	0.3	(0.0)
Returned to grazing forage	2.8	(0.4)	1.3	(0.3)	1.6	(0.2)	1.8	(0.3)	0.9	(0.1)	1.1	(0.1)
Shipped to another feedlot	1.4	(0.3)	1.0	(0.4)	1.1	(0.3)	2.0	(0.4)	0.4	(0.1)	0.6	(0.1)
Stolen	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
Lost for other reasons	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.1	(0.0)	0.0	(0.0)	0.0	(0.0)
Total	100.0		100.0		100.0		100.0		100.0		100.0	

<sup>1</sup> Cattle marketed or left the operation from July 1 of the previous year through June of the current year. Other cattle placed in the feedlot for the purposes other than being finished for the U.S. slaughter market such as animals being developed as breeding replacements are not included as disposition.

## 2. Cattle Source and Ownership of Placements

The percentages of animals placed by feedlots from various sources were similar for the two studies. Somewhat more of the cattle placed in each year were provided for custom feeding than were purchased at auction, although approximately one-third of the animals were purchased via auction. Small feedlots placed a larger percentage of cattle from auctions than large feedlots.

a. Percent of cattle placed for the U.S. slaughter market by <i>source of cattle</i> and by operation capacity:										
	1994 COFE						Feedlot '99			
	1,000 - 7,999 Head		8,000 Head or More		All Operations		1,000 - 7,999 Head		8,000 Head or More	
Source	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error
Born on this operation or another operation operated by this feedlot	2.3	(0.4)	0.6	(0.1)	0.8	(0.1)	3.1	(0.6)	0.4	(0.1)
Purchased via auction	45.1	(2.2)	26.5	(1.3)	29.7	(1.2)	46.9	(2.1)	31.0	(1.3)
Purchased via direct sale (cash or video, private treaty)	23.5	(1.6)	23.6	(1.8)	23.6	(1.5)	24.5	(1.9)	23.6	(1.6)
Provided for custom feeding	24.0	(2.3)	47.4	(2.0)	43.4	(1.7)	24.7	(2.1)	44.1	(1.8)
Other source	5.1	(1.1)	1.9	(0.9)	2.5	(0.8)	0.8	(0.2)	0.9	(0.3)
Total	100.0		100.0		100.0		100.0		100.0	

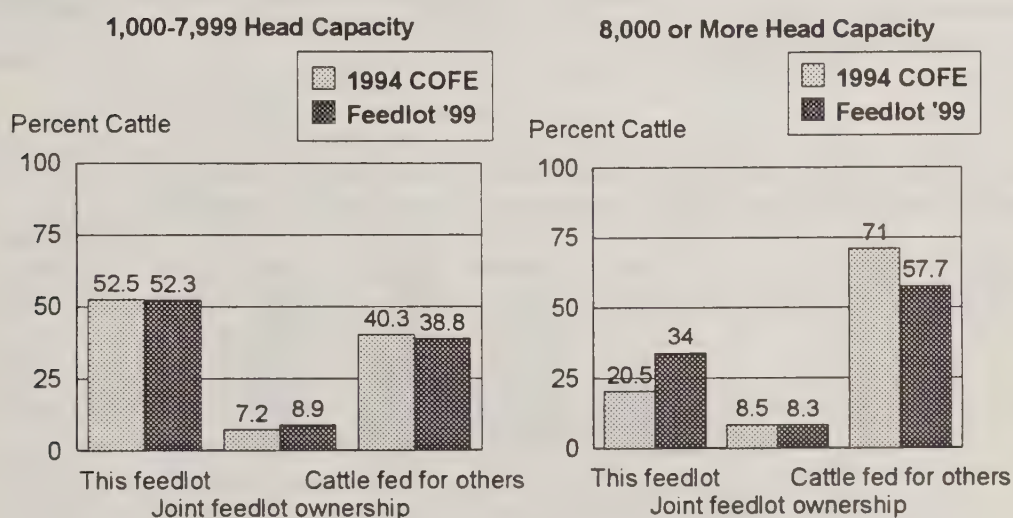


The percentage of cattle placed on feed that were owned by large feedlots increased (20.5 percent compared to 34.0 percent of cattle placed). Overall, 26.1 percent of placements were owned by feedlots in 1994 compared to 36.9 percent in 1999. Percentages of cattle owned by others decreased in large feedlots in 1999 compared to 1994.

b. Percent of cattle placed on feed for the U.S. slaughter market by *type of owner* at time of placement and by operation capacity:

	1994 COFE						Feedlot '99					
	1,000 - 7,999 Head		8,000 Head or More		All Operations		1,000 - 7,999 Head		8,000 Head or More		All Operations	
Owner	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error
This feedlot	52.5	(2.7)	20.5	(1.6)	26.1	(1.4)	52.3	(2.5)	34.0	(2.2)	36.9	(1.8)
Joint feedlot ownership with others	7.2	(0.9)	8.5	(0.6)	8.2	(0.5)	8.9	(1.4)	8.3	(0.8)	8.4	(0.7)
Others (cattle being custom fed for others)	40.3	(2.6)	71.0	(1.7)	65.7	(1.5)	38.8	(2.5)	57.7	(2.2)	54.7	(1.8)
Total	100.0		100.0		100.0		100.0		100.0		100.0	

Percent of Cattle Placed on Feed for the U.S. Slaughter Market by Type of Owner at the Time of Placement and by Operation Capacity, 1994 and 1999



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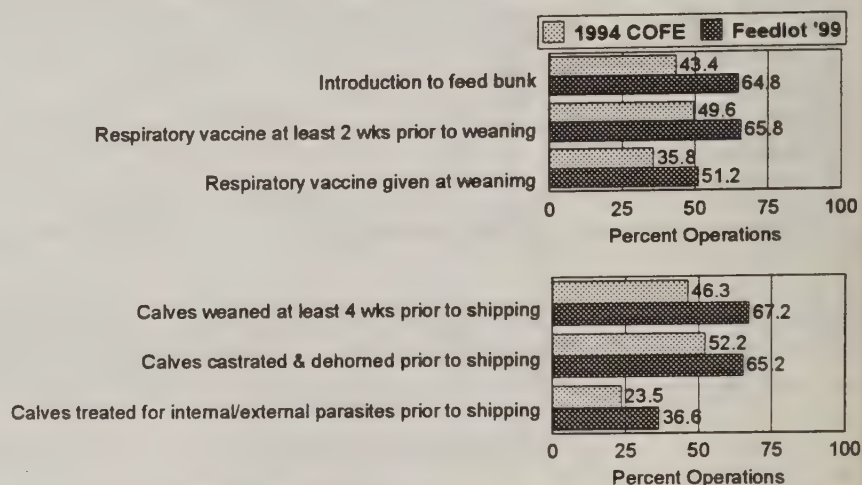
## B. Arrival Management and Group Processing

### 1. Effectiveness of Pre-arrival Processing

Procedures performed on cattle prior to feedlot arrival have been called preconditioning. Preconditioning has been shown to be effective in decreasing health problems in feedlot cattle, particularly in those animals weighing less than 700 lbs at placement.

A higher percentage of operations reported that each of the pre-arrival procedures listed below were *extremely* or *very* effective in reducing sickness and death loss in cattle placed at less than 700 lbs in 1999 compared to 1994. It appears that most of this increase may be from feedlots that responded *does not apply/don't know* in 1994 which may indicate that producers have become more knowledgeable about the effectiveness of pre-arrival processing.

Percent of Operations\* that Perceived Pre-arrival Management Practices on Cattle <700 lbs. to Be **Extremely** or **Very** Effective in Reducing Sickness and Death Loss, 1994 and 1999



\*For operations that placed cattle less than 700 lbs.

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a. For operations that placed cattle less than 700 lbs., percent of operations by perceived effectiveness of pre-arrival management practices on cattle less than 700 lbs. placed in reducing sickness and death loss:

Study	Extremely Effective	Stand. Error	Very Effective	Stand. Error	Moderately Effective	Stand. Error	Not/Slightly Effective	Stand. Error	Does Not Apply/Don't Know	Stand. Error	Total
Introduction of feed bunk											
1994 COFE	12.4	(1.3)	31.0	(1.7)	16.1	(1.3)	1.8	(0.5)	38.7	(1.9)	100.0
Feedlot '99	22.6	(1.7)	42.2	(2.2)	17.4	(1.8)	3.4	(0.9)	14.4	(1.9)	100.0
Respiratory vaccine at least 2 weeks prior to weaning											
1994 COFE	23.0	(1.6)	26.6	(1.6)	8.9	(0.9)	1.4	(0.4)	40.1	(1.8)	100.0
Feedlot '99	27.0	(2.0)	38.8	(2.2)	11.8	(1.6)	0.7	(0.3)	21.7	(2.0)	100.0
Respiratory vaccine given at weaning											
1994 COFE	12.5	(1.2)	23.3	(1.6)	16.6	(1.4)	3.7	(0.7)	43.9	(1.8)	100.0
Feedlot '99	18.7	(1.6)	32.5	(2.1)	21.7	(1.9)	1.6	(0.4)	25.5	(2.0)	100.0
Calves weaned at least 4 weeks prior to shipping											
1994 COFE	25.1	(1.6)	21.2	(1.5)	9.4	(1.2)	2.2	(0.5)	42.1	(1.8)	100.0
Feedlot '99	32.4	(2.0)	34.8	(2.1)	9.9	(1.5)	1.0	(0.3)	21.9	(2.0)	100.0
Calves castrated and dehorned prior to shipping											
1994 COFE	25.7	(1.6)	26.5	(1.6)	8.1	(1.0)	2.7	(0.7)	37.0	(1.8)	100.0
Feedlot '99	31.7	(2.1)	33.5	(2.1)	9.1	(1.2)	1.2	(0.4)	24.5	(2.2)	100.0
Calves treated for internal or external parasites prior to shipping											
1994 COFE	6.4	(0.9)	17.1	(1.4)	22.6	(1.5)	8.8	(1.1)	45.1	(1.9)	100.0
Feedlot '99	8.0	(1.0)	28.6	(2.1)	27.9	(1.9)	5.4	(0.9)	30.1	(2.2)	100.0



## 2. Initial Processing Timing

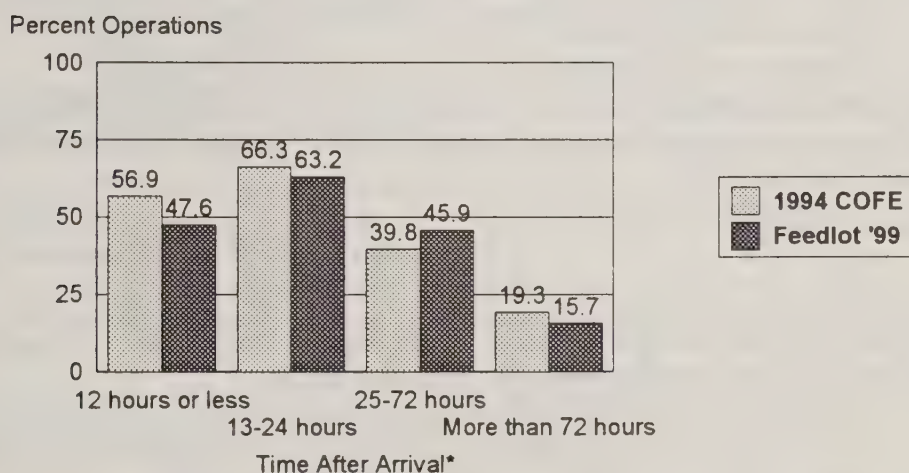
Processing cattle soon after arrival may be advantageous in reducing morbidity and mortality.

Virtually all feedlots processed some cattle as a group in each study year. Most feedlots processed some cattle in the first 24 hours after arrival. In each study year, the percentage of feedlots processing in the first 24 hours was greater for larger feedlots. Time categories in the table below are not mutually exclusive.

a. Percent of *operations* initially processing some cattle as a group during the following time periods after arrival by operation capacity:

	1994 COFE						Feedlot '99					
	1,000 - 7,999 Head		8,000 Head or More		All Operations		1,000 - 7,999 Head		8,000 Head or More		All Operations	
Time After Arrival	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error
12 hours or less	48.7	(2.4)	80.1	(2.0)	56.9	(1.8)	39.4	(2.7)	68.8	(2.2)	47.6	(2.1)
13-24 hours	59.6	(2.4)	85.5	(1.6)	66.3	(1.8)	55.8	(2.8)	82.7	(1.7)	63.2	(2.1)
25-72 hours	38.8	(2.3)	42.6	(2.3)	39.8	(1.8)	45.4	(2.8)	47.2	(2.3)	45.9	(2.1)
More than 72 hours	21.0	(2.0)	14.5	(1.7)	19.3	(1.5)	17.2	(2.1)	11.9	(1.6)	15.7	(1.6)
Any processing	98.2	(0.6)	99.4	(0.4)	98.5	(0.5)	96.6	(1.1)	100.0	--	97.5	(0.8)

Percent of Operations Initially Processing Some Cattle as a Group During the Following Time Periods\* After Arrival, 1994 and 1999



\* Time periods are not mutually exclusive.

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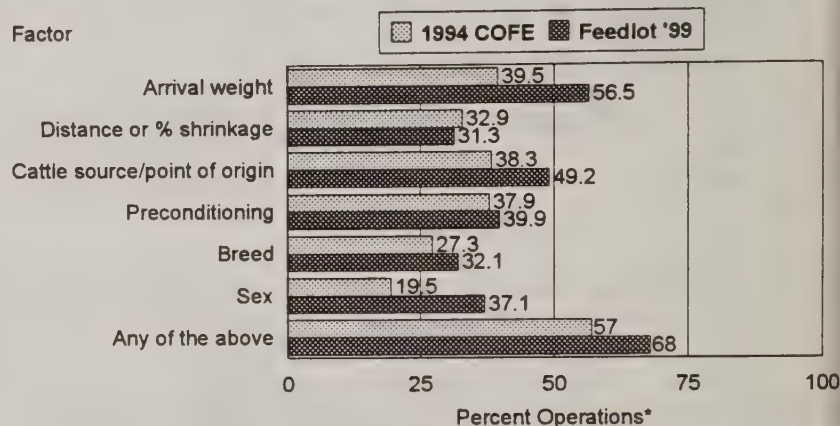
The majority of cattle placed in each study year (87.3 percent in 1994 and 80.8 percent in 1999) were processed within 24 hours after arrival. In both 1994 and 1999, a small percentage of placements were not processed following arrival (0.4 and 0.3, respectively).

b. Percent of *cattle* initially processed as a group during the following time periods after arrival by operation capacity:

Time After Arrival	1994 COFE						Feedlot '99					
	1,000 - 7,999 Head		8,000 Head or More		All Operations		1,000 - 7,999 Head		8,000 Head or More		All Operations	
	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error
12 hours or less	37.5	(2.6)	43.4	(2.4)	42.4	(2.0)	29.4	(2.3)	40.0	(2.4)	38.3	(2.0)
13-24 hours	36.8	(2.2)	46.6	(2.2)	44.9	(1.9)	35.1	(2.2)	44.0	(2.1)	42.5	(1.8)
25-72 hours	17.7	(1.6)	8.8	(0.8)	10.3	(0.7)	25.5	(2.0)	14.8	(1.3)	16.6	(1.1)
More than 72 hours	6.4	(0.8)	1.0	(0.2)	2.0	(0.2)	8.3	(1.3)	1.2	(0.3)	2.3	(0.3)
Not processed	1.6	(0.4)	0.2	(0.0)	0.4	(0.1)	1.7	(1.0)	0.0	(0.0)	0.3	(0.2)
Total	100.0		100.0		100.0		100.0		100.0		100.0	

Percent of Operations\* that Changed Any Processing Procedures for New Arrivals Based on Each of the Following Factors, 1994 and 1999

More feedlots appear to be adjusting processing procedures based on animal and transportation factors than previously. The largest changes in the percentage of operations that adjusted their procedures were for animal arrival weight and sex of the animal. Alteration of processing procedures was more common for larger feedlots across all animal and transportation categories.



\* For operations that processed new arrivals. Categories are not mutually exclusive.

#4269

c. For operations that processed new arrivals, percent of operations that changed any processing procedures for new arrivals based on each of the following factors and by operation capacity:

Factor	1994 COFE						Feedlot '99					
	1,000 - 7,999 Head		8,000 Head or More		All Operations		1,000 - 7,999 Head		8,000 Head or More		All Operations	
	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error	Percent	Stand. Error
Arrival weight	32.8	(2.3)	58.6	(2.4)	39.5	(1.8)	53.7	(2.8)	63.5	(2.2)	56.5	(2.1)
Distance transported or percent shrinkage	27.7	(2.2)	47.8	(2.4)	32.9	(1.7)	28.3	(2.5)	39.1	(2.2)	31.3	(1.9)
Source of cattle	N/A/V	N/A/V	N/A/V	N/A/V	N/A/V	N/A/V	44.3	(2.8)	61.6	(2.3)	49.2	(2.1)
Point of origin	30.7	(2.2)	59.8	(2.3)	38.3	(1.8)	N/A/V	N/A/V	N/A/V	N/A/V	N/A/V	N/A/V
Marketing channel	23.2	(2.0)	47.8	(2.4)	29.6	(1.7)	N/A/V	N/A/V	N/A/V	N/A/V	N/A/V	N/A/V
Preconditioning	31.7	(2.2)	55.7	(2.4)	37.9	(1.8)	36.6	(2.7)	48.3	(2.3)	39.9	(2.0)
Sex	13.2	(1.6)	37.3	(2.4)	19.5	(1.3)	31.9	(2.6)	50.3	(2.3)	37.1	(2.0)
Breed	6.2	(1.1)	21.1	(2.0)	10.1	(1.0)	10.5	(1.5)	21.6	(2.0)	13.7	(1.3)
Any of the above	51.4	(2.4)	72.9	(2.2)	57.0	(1.9)	66.1	(2.7)	72.7	(2.1)	68.0	(2.0)



The percentages of operations providing additional pen, waterer, and bunk space for newly arrived cattle were similar in the two study years.

d. Percent of operations that provided new arrivals with additional pen space, water space, and bunk space (compared to cattle on feed for more than 30 days) by frequency:									
Study	Always	Standard Error	Most of the Time	Standard Error	Sometimes	Standard Error	Never	Standard Error	Total
<b>Additional Pen Space</b>									
1994 COFE	14.4	(1.3)	17.0	(1.4)	29.9	(1.7)	38.7	(1.8)	100.0
Feedlot '99	19.9	(1.7)	20.7	(1.7)	26.4	(1.8)	33.0	(2.1)	100.0
<b>Additional Waterer Space</b>									
1994 COFE	14.6	(1.3)	14.5	(1.3)	30.1	(1.7)	40.8	(1.9)	100.0
Feedlot '99	19.0	(1.7)	18.7	(1.6)	23.4	(1.8)	38.9	(2.1)	100.0
<b>Additional Bunk Space</b>									
1994 COFE	18.6	(1.5)	19.3	(1.4)	28.2	(1.7)	33.9	(1.8)	100.0
Feedlot '99	24.5	(1.9)	22.9	(1.8)	21.5	(1.6)	31.1	(2.0)	100.0

Cattle are reprocessed within 30 days of arrival for many reasons including administration of initial or further vaccinations against respiratory disease, metaphylaxis (mass-treatment) with an antimicrobial to decrease morbidity and mortality, and delayed implantation to help control the buller steer syndrome.

Similar percentages of feedlots reprocessed and similar percentages of cattle were reprocessed within 30 days of arrival in 1994 and 1999. Approximately two-thirds of feedlots reprocessed at least some cattle, while one-quarter of total placements were reprocessed for various reasons.

e. For operations that initially processed cattle/calves as a group within 30 days of arrival, percent of operations processing cattle (and percent of cattle being processed) a second time within 30 days after arrival:				
Measure	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
Operations	65.1	(1.8)	63.8	(2.0)
Cattle	24.4	(1.4)	24.6	(1.3)

In 1999, approximately three-quarters (78.9 percent) of all feedlots used the same pens for receiving and shipping cattle, a higher percentage than for 1994 (66.1 percent).

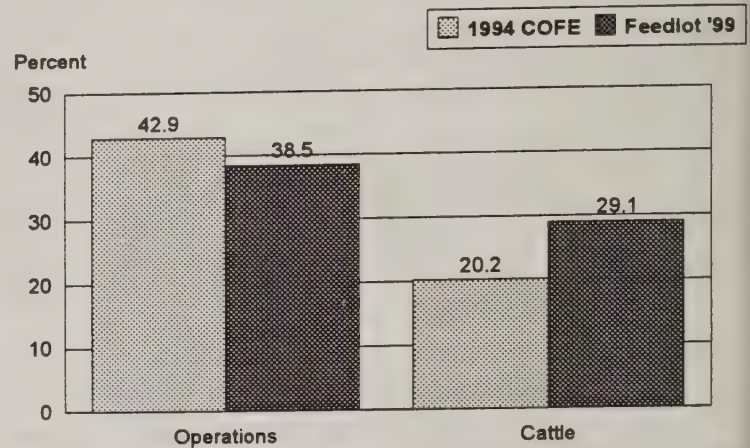
f. Percent of operations that used the same holding pens for receiving and shipping cattle:			
1994 COFE		Feedlot '99	
Percent	Standard Error	Percent	Standard Error
66.1	(1.8)	78.9	(1.7)

### 3. Branding and Identification

Branding is a visually obvious and permanent form of identification, although it can result in substantial hide damage and subsequent economic loss. In 1994, a surprisingly large percentage of feedlots hide branded cattle after arrival (42.9 percent of feedlots), and one in five cattle (20.2 percent) were hide branded. In 1999, 38.5 percent of feedlots hide branded and 29.1 percent of all cattle were hide branded.

Data gathered in the Feedlot '99 study indicated that there was not one main reason that feedlots hide branded cattle (presented in *Part I: Baseline Reference of Feedlots Management Practices, 1999*). Therefore, efforts to decrease economic losses due to hide branding must account for the variety of reasons that motivate branding.

Percent of Operations that Hide Branded (Freeze or Hot) Cattle and Percent of Cattle Branded After Arrival, 1994 and 1999



#4270

a. Percent of operations (and percent of cattle) that hide branded (freeze or hot) cattle after arrival:

Measure	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
i. Operations	42.9	(1.7)	38.5	(1.8)
ii. Cattle	20.2	(1.6)	29.1	(2.2)

The percentage of feedlots branding any cattle at one or more of the following locations decreased over time. There is some evidence that the greatest decrease in branding site use was for the head, neck, or shoulder.

b. Percent of all operations (and percent of cattle) that hide branded (freeze or hot) at one or more of the following sites:

Site	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
<b>Operations</b>				
Head, neck, or shoulder	9.5	(1.1)	6.3	(0.7)
Side or rib	10.1	(1.1)	8.0	(1.0)
Lower rear leg, upper rear leg, or hip	36.6	(1.7)	34.5	(1.8)
<b>Cattle Branded</b>				
Head, neck, or shoulder	2.2	(0.3)	2.3	(0.4)
Side or rib	1.6	(0.2)	1.6	(0.3)
Lower rear leg, upper rear leg, or hip	16.4	(1.5)	25.5	(2.1)



## C. Nutritional Management

### 1. Implants

Implants are a cost-effective method of increasing cattle performance, feed efficiency, and lean muscle mass. Much research has been focused on developing appropriate implant strategies to enhance their economic benefit. The greatest benefits of implants are realized when cattle are exposed to active implants throughout the feeding period.

There was little change in the number of times cattle less than 700 lbs at placement were implanted from 1994 to 1999.

a. For steers and heifers less than 700 lbs. when placed, percent implanted by number of times implanted:					
Number of Times	1994 COFE		Question Variation	Feedlot '99	
	Percent	Standard Error		Percent	Standard Error
0	1.3	(0.2)		1.9	(0.4)
1	21.1	(1.6)		18.1	(1.5)
2 or more	77.6	(1.6)		74.0	(1.7)
Total	100.0		2	6.0	(0.9)
			3 or more	100.0	

For cattle 700 lbs or more at placement, the percentage that were not implanted increased in 1999 (2.8 percent) compared to 1994 (1.1 percent). The percentage that were implanted two or more times decreased over the period (from 35.0 percent to 30.4 percent).

b. For steers and heifers 700 lbs. or more when placed, percent of calves implanted by number of times implanted:					
Number of Times	1994 COFE		Question Variation	Feedlot '99	
	Percent	Standard Error		Percent	Standard Error
0	1.1	(0.2)		2.8	(0.7)
1	63.9	(2.1)		66.8	(2.2)
2 or more	35.0	(2.2)		30.0	(2.1)
Total	100.0		2	0.4	(0.2)
			3 or more	100.0	

## 2. Feed Additives

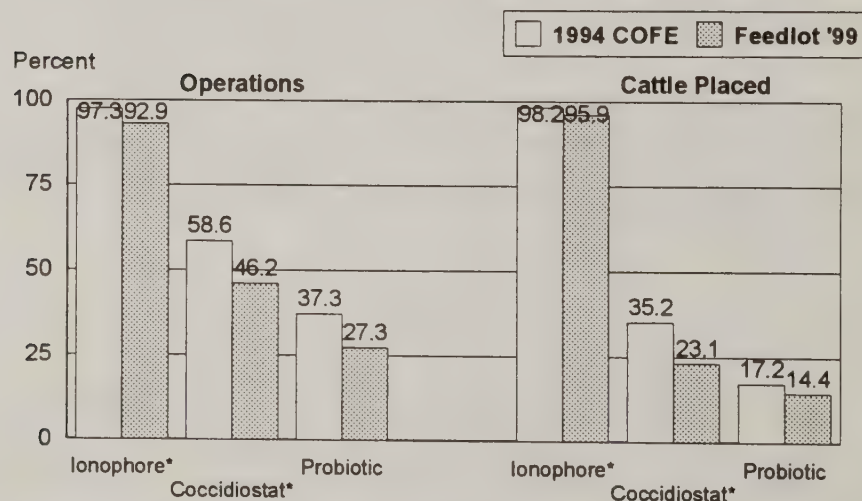
Ionophores are rumen microbial modifiers that improve feed efficiency (decrease feed-to-gain ratio) through enhancement of rumen microbial metabolism and also provide some control of coccidiosis. Coccidiostats are anticoccidial drugs that may be used to treat or prevent coccidiosis. The primary coccidial parasites of feedlot cattle are *Eimeria bovis* and *E. zurnii*. Probiotics are combinations of rumen microbes that usually include *Lactobacillus* spp. and are thought to enhance the development of a healthy rumen microbial environment.

From 1994 to 1999, there was a small shift downward in the percentages of feedlots using, and placements that were fed, ionophores, coccidiostats, and probiotics. Greater than 90 percent of feedlots used an ionophore in 1999, and greater than 95 percent of cattle received an ionophore.

a. Percent of operations that fed (and percent of cattle placed that were fed) the following additives:				
Additive	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
i. Operations				
Ionophore*	97.3	(0.6)	92.9	(1.3)
Coccidiostat*	58.6	(1.8)	46.2	(2.1)
Probiotic	37.3	(1.8)	27.3	(1.8)
ii. Cattle placed				
Ionophore*	98.2	(0.5)	95.9	(0.8)
Coccidiostat*	35.2	(2.4)	23.1	(2.7)
Probiotic	17.2	(1.6)	14.4	(1.7)

\* Ionophore such as Rumensin®, Bovatec®, or Cattlyst®.  
Coccidiostat other than an ionophore such as Corid® or Deccox®.

Percent of Operations that Fed  
(and Percent of Cattle Placed that Were Fed)  
the Following Additives, 1994 and 1999



\* Ionophore such as Rumensin®, Bovatec®, or Cattlyst®.  
Coccidiostat other than an ionophore such as Corid® or Deccox®.

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### 3. Other

Heifers in which estrus is not controlled may have erratic feed intake and health problems.

Melengesterol acetate (MGA<sup>®</sup>) is a progestin used as a feed additive to suppress ovarian activity in intact heifers. Additionally, decreasing the stress associated with estrus increases average daily gains and gain-to-feed ratio.

Almost identical percentages of feedlots in 1994 and 1999 fed MGA<sup>®</sup> to at least some heifers. These operations represent approximately two-thirds of operations that placed female cattle on feed.

a. For operations that placed female cattle on feed, percent of operations feeding MGA<sup>®</sup>:

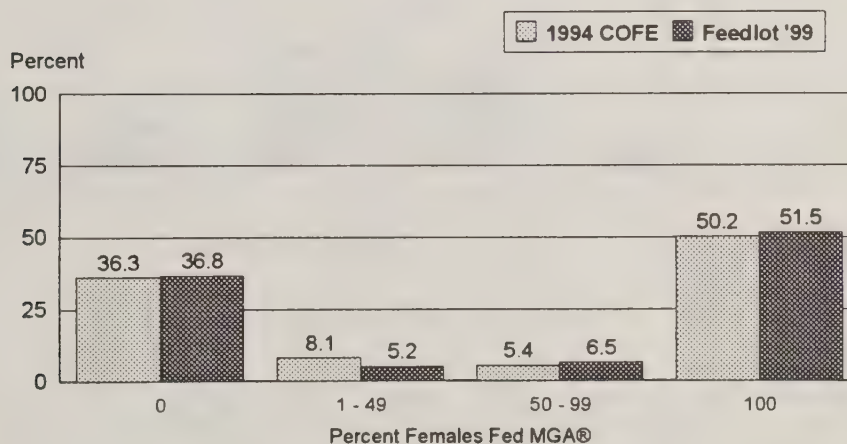
1994 COFE		Feedlot '99	
Percent	Standard Error	Percent	Standard Error
63.7	(1.9)	63.2	(2.1)

A majority of the operations that fed any female cattle MGA<sup>®</sup> fed it to all female cattle.

b. For operations that placed female cattle on feed, percent of operations by percent of females fed MGA<sup>®</sup>:

Percent Females Fed MGA <sup>®</sup>	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
0	36.3	(2.0)	36.8	(2.1)
1 - 49	8.1	(1.1)	5.2	(0.8)
50 - 99	5.4	(0.9)	6.5	(1.0)
100	50.2	(2.0)	51.5	(2.2)
Total	100.0		100.0	

Percent of Operations\* by Percent of Females Fed Melengesterol Acetate (MGA<sup>®</sup>), 1994 and 1999



\* For operations that placed female cattle on feed.

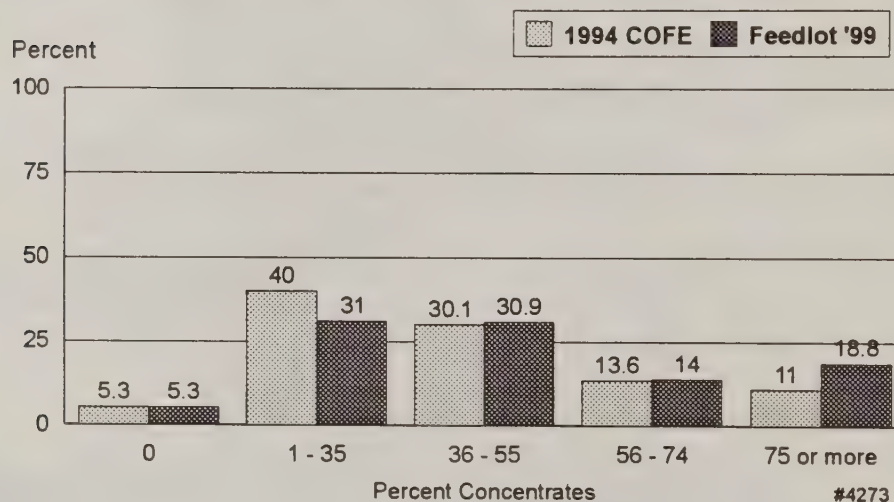
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Cattle require a period of adaptation to high-energy concentrate (non-structural carbohydrate) rations to minimize the occurrence of lactic acidosis. Cattle that are maladapted to rations containing high concentrations of readily fermentable carbohydrates will likely suffer from rumen lactic acidosis and related diseases. Such diseases include, but are not limited to, dehydration, scours, liver abscessation, and laminitis (founder).

The percentage of feedlots that fed new arrivals a ration containing 1-35 percent energy concentrate (such as corn, wheat, or barley) decreased from 1994 to 1999. Over the same period, the percentage of feedlots that fed a ration containing 75 percent or more energy concentrate to new arrivals increased.

c. Percent of operations that fed the following average levels of concentrates (dry matter basis) to cattle in rations on arrival:				
Percent Concentrate	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
0	5.3	(0.9)	5.3	(1.1)
1 - 35	40.0	(1.9)	31.0	(2.1)
36 - 55	30.1	(1.7)	30.9	(1.9)
56 - 74	13.6	(1.3)	14.0	(1.5)
75 or more	11.0	(1.2)	18.8	(1.7)
Total	100.0		100.0	

Percent of Operations that Fed the Following Average Levels of Concentrates (Dry Matter Basis) to Cattle in Rations on Arrival, 1994 and 1999





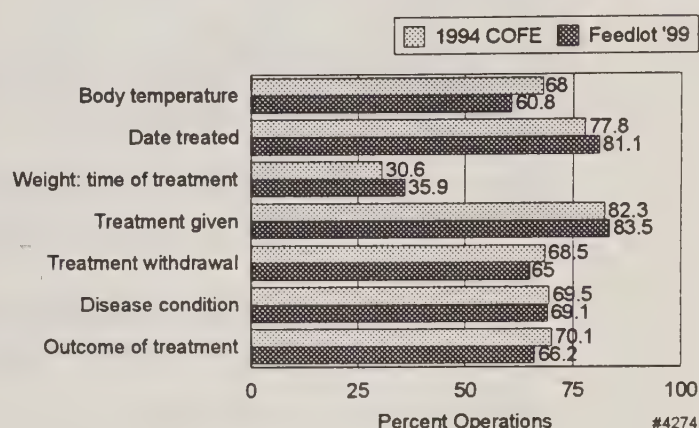
## D. Health Management

### 1. Health Records Maintained

Disease conditions may be confused when basing a diagnosis solely on clinical signs. Different diseases may result in similar manifestations such as drooped ears, lowered head appearance, and unresponsiveness. Recording various animal and treatment information can provide data to monitor disease occurrence and treatment success and can be used for training purposes. Some examples of simple, yet valuable information include body temperature to help differentiate an infectious condition from a non-infectious condition, treatment date or expected withdrawal period (to avoid violative residues), disease diagnosis, and response to therapy. Further, day-to-day variations in an animal's weight may be a sensitive indicator of either treatment success or the need to implement a secondary treatment regimen.

The percentage of feedlots recording the following information changed little from 1994 to 1999. There was a slight decrease in the percentage of feedlots that recorded body temperature *always* or *most of the time* (68.0 percent in 1994 compared to 60.8 percent in 1999). The percentage of feedlots that measured and recorded weight at time of treatment *always* or *most of the time* appears to have increased (30.3 percent compared to 35.9 percent).

Percent of Operations that Recorded the Following for Sick Animals *Always* or *Most of the Time*, 1994 and 1999



a. Percent of operations by frequency of recording the following for sick animals:

Study	Always	Standard Error	Most of the Time	Standard Error	Sometimes	Standard Error	Never	Standard Error
Body temperature								
1994 COFE	54.7	(1.8)	13.3	(1.3)	13.0	(1.3)	19.0	(1.5)
Feedlot '99	42.3	(2.0)	18.5	(1.7)	16.3	(1.6)	22.9	(1.9)
Date treated								
1994 COFE	71.8	(1.6)	6.0	(0.9)	7.2	(1.0)	15.0	(1.4)
Feedlot '99	71.8	(2.0)	9.3	(1.4)	6.0	(1.1)	12.9	(1.7)
Weight at time of treatment								
1994 COFE	23.3	(1.4)	7.3	(0.9)	13.2	(1.2)	56.2	(1.7)
Feedlot '99	25.5	(1.7)	10.4	(1.4)	14.0	(1.4)	50.1	(2.1)
Treatment given								
1994 COFE	77.7	(1.6)	4.6	(0.8)	4.9	(0.9)	12.8	(1.3)
Feedlot '99	73.5	(2.0)	10.0	(1.5)	4.1	(0.9)	12.4	(1.6)
Treatment withdrawal period								
1994 COFE	63.3	(1.8)	5.2	(0.9)	6.3	(0.9)	25.2	(1.7)
Feedlot '99	57.6	(2.1)	7.4	(1.3)	9.3	(1.3)	25.7	(2.0)
Disease condition (shipping fever, lameness, pneumonia, etc.)								
1994 COFE	61.7	(1.8)	7.8	(1.0)	8.5	(1.1)	22.0	(1.6)
Feedlot '99	57.6	(2.1)	11.5	(1.5)	12.5	(1.5)	18.4	(1.8)
Outcome of treatment (return to pen, died, or culled)								
1994 COFE	62.3	(1.8)	7.8	(1.0)	8.1	(1.1)	21.8	(1.6)
Feedlot '99	57.0	(2.1)	9.2	(1.4)	10.1	(1.4)	23.7	(2.0)

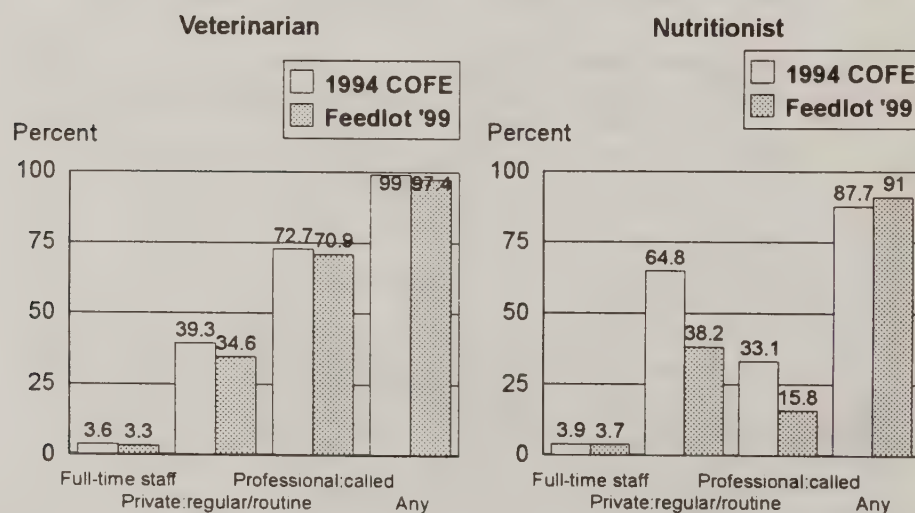
## 2. Use of Veterinarian and Nutritionist Services

Almost all feedlots (97.4 percent) used the services of a veterinarian in 1999, while many (91.0 percent) feedlots used the services of a nutritionist. Approximately one-third of feedlots had a veterinarian and/or nutritionist that made regular visits in 1999.

a. Percent of operations that used the services of the following types of consultants during the respective year ending June 30:

Service	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
<b>Veterinarian</b>				
Full-time veterinarian on staff	3.6	(0.6)	3.3	(0.5)
Private veterinarian who made regular or routine visits	39.3	(1.6)	34.6	(1.6)
Professional veterinarian called as needed	72.7	(1.4)	70.9	(1.6)
Any veterinarian	99.0	(0.3)	97.4	(0.7)
<b>Nutritionist</b>				
Full-time nutritionist on staff	3.9	(0.6)	3.7	(0.7)
Private nutritionist who made regular or routine visits	64.8	(1.7)	38.2	(1.8)
Professional nutritionist called as needed	33.1	(1.8)	15.8	(1.4)
Feed company nutritionist	N/A V	N/A V	56.0	(2.1)
Other nutritionist	N/A V	N/A V	2.1	(0.7)
Any nutritionist	87.7	(1.3)	91.0	(1.5)

Percent of Operations that Used the Services of Veterinarians and Nutritionists, 1994 and 1999



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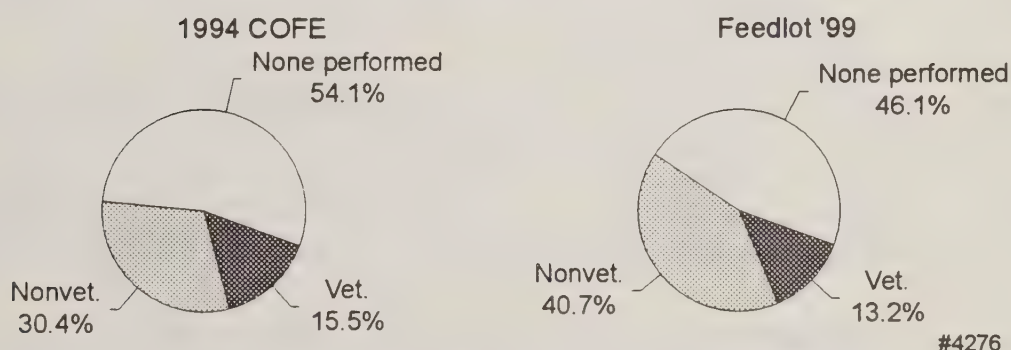


The best way to categorize cause of death in a feedlot animal is via a postmortem examination (autopsy/necropsy). Postmortems can be effectively performed by veterinarians or trained feedlot personnel. Failure to do postmortems will likely result in some misclassification of animal deaths and may lead to the inability to identify trends in cattle health such as treatment failure, misdiagnosis of live animals, or seasonal peaks in the incidence of diseases such as acute interstitial pneumonia.

There was a substantial increase in the percentage of dead cattle that had a postmortem examination from 1994 (45.9 percent) to 1999 (53.9 percent). This increase was primarily from postmortems by non-veterinarians.

b. Percent of dead cattle where a postmortem examination was done during the year by:				
Examiner	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
A veterinarian	15.5	(1.5)	13.2	(0.7)
A nonveterinarian	30.4	(2.4)	40.7	(2.1)
No postmortem performed	54.1	(2.5)	46.1	(2.3)
Total	100.0		100.0	

Percent of Dead Cattle Where a Postmortem Examination Was Done by Examiner, 1994 and 1999



### 3. Carcass Disposal Methods

The percentages of feedlots that used various dead animal disposal methods (and the percentages of dead animals disposed of) changed little from 1994 to 1999. Operations may have used more than one method of dead animal disposal.

a. Percent of operations (and percent of dead animals) by dead animal disposal method:				
Disposal Method	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
<b>Operations</b>				
Buried on farm	11.8	(1.0)	10.7	(1.3)
Landfill	1.2	(0.4)	1.6	(0.4)
Renderer	94.3	(0.7)	94.4	(0.8)
Other	1.0	(0.4)	0.4	(0.2)
<b>Dead Animals</b>				
Buried on farm	3.5	(0.8)	5.3	(1.5)
Landfill	0.7	(0.5)	0.5	(0.2)
Renderer	95.8	(0.9)	94.1	(1.6)
Other	0.0	(0.0)	0.1	(0.1)
Total	100.0		100.0	



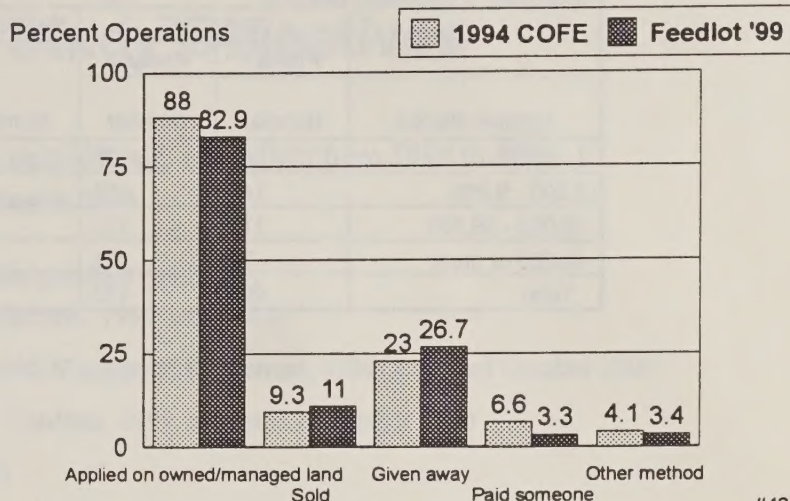
## E. Environmental Programs

### 1. Waste Management

Manure disposal may pose problems for some feedlots, whereas others are able to capitalize on manure as a valuable, high quality fertilizer.

Feedlot operators used multiple means to dispose of manure from their operations. The majority of feedlots applied manure to land owned or managed by the feedlot, although this proportion of feedlots decreased slightly from 1994 to 1999. Interestingly, there was a slight increase in the percentage of feedlots that sold manure and a decrease in those that paid someone to take it.

Percent of Operations that Used the Following Manure Disposal Methods, 1994 and 1999



a. Percent of operations that used the following manure disposal methods:

Method	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
Applied on land owned or managed by the feedlot	88.0	(1.0)	82.9	(1.1)
Sold	9.3	(1.0)	11.0	(0.9)
Given away	23.0	(1.3)	26.7	(1.4)
Paid someone to take it	6.6	(0.7)	3.3	(0.4)
Removed by another method	4.1	(0.6)	3.4	(0.6)

The percentage of feedlots that applied manure to land owned or managed by the feedlot that tested the nutrient content of soil increased in 1999 compared to 1994. Approximately three-quarters (76.1 percent) of the feedlots in this category tested the soil where the manure was being applied. It is unclear why a greater proportion tested soil if it were not to determine the application rate. Testing may have been part of a management plan to monitor phosphorous concentration in the soil.

b. For operations that applied manure on land owned by the feedlot, percent of operations that tested the nutrient content of the soil receiving the manure (and percent testing to determine the manure application rate) by operation capacity:

Test Type	1994 COFE		Feedlot '99	
	Percent	Standard Error	Percent	Standard Error
Tested	69.1	(1.9)	76.1	(2.0)
Tested to determine manure application rate	62.4	(2.4)	53.5	(2.5)



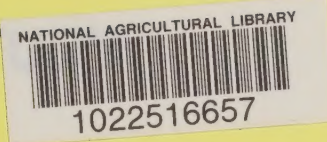
## Appendix I: Sample Profile

### A. Responding Operations - 1,000 Head or More Capacity Feedlots

a. Number of operations by number placed during the year July 1 through June 30:			
	1994 COFE		Feedlot '99
	Phase I	Phase II	
Number Placed	Number	Number	Number
1 - 2,499	161	135	134
2,500 - 9,999	143	131	160
10,000 - 39,999	118	116	133
40,000 or more	76	71	93
Total	498	453	520



# NAHMS FEEDLOT '99 ST



## Completed and Expected Outputs and Related Study Objectives

1. Describe changes in management practices and animal health in feedlots from 1994 to 1999.
  - *Changes in the U.S. Feedlot Industry, 1994-1999*, August 2000
2. Describe the management in feedlots that impacts product quality.
  - Part I: Baseline Reference of Feedlot Management Practices, 1999, May 2000
  - Part II: Baseline Reference of Feedlot Health and Health Management Practices, 1999, expected October 2000
  - Part III: Health Management and Biosecurity in U.S. Feedlots, 1999, expected December 2000
  - Quality assurance (interpretive report), expected 2001
  - Water quality (info sheet), expected fall 2000
  - Feed quality (info sheet), expected fall 2000
  - Implants (info sheet), May 2000
  - Vaccination practices (info sheet), expected fall 2000
  - Injections (info sheet), expected fall 2000
3. Identify factors associated with shedding by feedlot cattle of specified pathogens, such as *E. coli* 0157, *Salmonellae* spp., and *Campylobacter* spp.
  - *E. coli* 0157:H7 (info sheet), expected 2001
  - *Salmonella* (info sheet), expected 2001
  - *Campylobacter* (info sheet), expected 2001
4. Describe antimicrobial usage in feedlots.
  - Part I: Baseline Reference of Feedlot Management Practices, 1999, May 2000
  - Part II: Baseline Reference of Feedlot Health and Health Management Practices, 1999, expected October 2000
  - Part III: Health Management and Biosecurity in U.S. Feedlots, 1999, expected December 2000
  - Antimicrobial usage in feedlots, expected fall 2001
5. Identify priority areas for pre-arrival processing of cattle and calves.
  - Part I: Baseline Reference of Feedlot Management Practices, 1999, May 2000
  - Part II: Baseline Reference of Feedlot Health and Health Management Practices, 1999, expected October 2000
  - Implants (info sheet), May 2000
  - Pre-arrival processing (info sheet), expected fall 2000

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